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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 19

Application Number: 09/743,125
Filing Date: April 23, 2001
Appellants: SULZBACH ET AL.

Aaron R. Ettelman
For Appellants

EXAMINER'S ANSWER

This is in response to the appeal brief filed April 28, 2003.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The statement of the issues in the brief is correct.

(7) Grouping of Claims

The brief includes a statement that claims 8-13 and 15-20, and claim 14 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,641,855	Scherr et al.	June, 1997

(10) Ground of Rejection

The following ground of rejection is applicable to the appealed claims. The text of section 103(a) of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherr et al.

Scherr et al. discloses a process for preparing water-soluble condensation products (col. 2, lines 16-20 and col. 3, lines 12-16) comprising reacting a polyetheramine (col. 3, lines 12-13) or a polyetherpolyamine (a) (col. 3, lines 27-30) with a monoethylenically unsaturated carboxylic acid ester (b) such as diemthyl maleate (col. 4, lines 14-15 and 23) in a ratio that from 20 to 99% of the primary and secondary amino groups of (a) survive unchanged (col. 6, lines 6-9) which converts to an equivalent ratio of reactive hydrogen atoms in (b) to α,β C=C double bonds of from 1.20:1 to 1.99:1. The product is then reacted with bis-glycidyl ethers (c) (i.e. polyepoxides with two oxirane rings, col. 4, line 67 to col. 5, line 1) in a ratio of (c):(a) of 1:0.05 (col. 6, lines 8-11) which converts to 20:1.

Although the claimed aminopolyalkylene oxide is not exemplified, Scherr et al. sets forth polyetheramines or polyetherpolyamines within the ambit of the claimed aminopolyalkylene oxide in column 3, lines12-13 and 27-30, respectively. It would have been obvious to employ the polyetheramine or polyetherpolyamine of Scherr et al. as component (a) based on their recognition by patentees as equivalent reactants with monoethylenically unsaturated carboxylic acid ester (b).

Claim 14 limits the ratio of reactive hydrogens in (b) to the α,β C=C double bonds in (a) to from 4:1 to 1:4.

Scherr et al. (col. 6, lines 4-5) states that "[t]he components (a), (b) and (c) can be used in any desired ratio." Thus, the teachings of the reference are not confined to

the particular ratio of amino groups:monoethylenically unsaturated double bond of from 1.20:1 to 1.99:1 (col. 6, lines 6-9) which are specific to the formulation of "ready-to-use water-soluble condensation products (col. 6, lines 5-6)."

It would have been obvious to increase the particular ratio of amino groups:monoethylenically unsaturated double bond to within the claimed parameters in order to prepare water-soluble condensation products which are stable for storage and not prepared for immediate use.

(11) Response to Arguments

The arguments presented on pages 7-9 of the brief will be addressed *seriatum*.

Rejection of claims 8-13 and 15-20

Scherr et al. (col. 6, lines 19-22) espouses "[t]hose compounds of group (b) which contain a monoethylenically unsaturated double bond react in both versions of the process with the compounds of group (a) in the manner of Michael addition." Example 5 (col. 8, lines 1-14) shows a Michael addition involving acrylic acid as the monoethylenically unsaturated carboxylic acid ester (b). Michael addition reactions of compounds (a) with primary or secondary amino groups and monoethylenically unsaturated carboxylic acid esters as (b) involve the active hydrogen atoms pendant on the amino groups of component (a) and the unsaturated moiety of component (b). Accordingly, Scherr et al. recites the claimed reaction of α,β-unsaturated carboxylic acid esters with aminopolyalkylene oxide compounds wherein the unsaturation of prior art component (b) is reacted with the active hydrogen atoms of polyetheramine or polyetherpolyamine (a).

The 20 to 99% survival of primary or secondary amino groups from polyether(poly)amine (a) once reacted with monoethylenically unsaturated carboxylic acid ester (b) disclosed in Scherr et al. (col. 6, lines 6-9) encompasses any primary or secondary amino groups depending upon which polyether(poly)amine is utilized. The reference clearly defines the ratio as predicated upon the active hydrogen atoms of polyether(poly)amine (a) regardless of their status as primary or secondary amino groups as supported by the ensuing description that the reaction is a Michael addition reaction (col. 6, lines 20-22) which by definition is based on the active hydrogen atoms of polyether(poly)amine (a) and the unsaturation of monoethylenically unsaturated carboxylic acid ester (b).

The claimed equivalent ratio of the reactive hydrogens in (b) to the α,β C=C double bonds in (a) of from 10:1 to 1:10 embraces the prior art equivalent ratio of active hydrogens from polyether(poly)amine (a) to the monoethylenically unsaturated double bond of compound (b) of from 1.20:1 to 1.99:1. Scherr et al. affirmatively recites the desirability of the ratio to yield ready-to-use water-soluble condensation products (col. 6, lines 5-6). Therefore, a *prima facie* case of obviousness has been established.

Rejection of claim 14

Claim 14 confines the the ratio of reactive hydrogens in (b) to the α,β C=C double bonds in (a) to from 4:1 to 1:4. Scherr et al. (col. 6, lines 4-5) states that "[t]he components (a), (b) and (c) can be used in any desired ratio." The particular survival of from 20 to 99% of primary or secondary amino groups emanating from the reaction of polyether(poly)amine (a) with monoethylenically unsaturated carboxylic acid

ester (b) is specific to the production of "ready-to-use water-soluble condensation products (col. 6, lines 5-9)." Consequently, patentees are open to higher amino group survival contents when formulating water-soluble condensation products for uses other than those in the "ready-to-use" state.

It would have been obvious to prepare the water-soluble condensation products of Scherr et al. using active hydrogen:monoethylenically unsaturated double bond ratios within the claimed range in order to obtain a storage-stable product not required for immediate application.

Scherr et al. specifically refers to the monoethylenically unsaturated double bonds of compound (b) to be reacted with the amino groups of compound (a) in column 6, lines 19-22. The amino group survival percentage pertains to any primary or secondary amino groups endemic to the polyether(poly)amine wherein the active hydrogens pendant on the amino groups of (a) are reacted with the monoethylenically unsaturated double bonds of (b).

There is no evidence of record confirming the alleged criticality of the reactive hydrogen atoms:α,β C=C double bonds equivalent ratios of claims 8 and 14 over the closest prior art value of 1.99:1.

(12) Conclusion

Based on the findings of fact set forth in Scherr et al., the claimed process involving the reaction of an α,β-unsaturated carboxylic acid ester (a) and aminopolyalkylene oxide (b) within particular reactive hydrogen atoms:α,β C=C double bonds equivalent ratios does not involve a patentable reaction step within the requirements of 35 U.S.C. 103(a). For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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rs
May 19, 2003

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